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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/750,386	12/27/2000	John S. Sadowsky	42390P9858	6353

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EXAMINER

PATHAK, SUDHANSHU C

ART UNIT PAPER NUMBER

2611

DATE MAILED: 10/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/750,386	SADOWSKY, JOHN S.	
	Examiner	Art Unit	
	Sudhanshu C. Pathak	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on July 6th, 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 and 25-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 and 25-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on July 6th, 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-23 and 25-27 are pending in the application.
2. Claim 24 has been canceled.

Response to Arguments

3. Applicant's arguments with respect to claims 1-23 and 25-27 have been considered but are moot in view of the new ground(s) of rejection.
4. Furthermore, in regards to the arguments that "... Pellon does not teach or suggest decoding communication bits in a received signal because it is the characteristic of IF signal itself that Pellon is interested in directly converting to digital form..." i.e. Pellon does not teach encoding information into RF or IF signals for delivery. This is incorrect, Pellon does teach encoding information into RF or IF signals for delivery (Column 19, lines 11-20) wherein the digital data is encoded as in-phase and quadrature components.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
6. Claims 1-4, 10-12, 14, 17-21, 23 & 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pellon (5,392,042) in view of Khlat et al (6,678,340).

Regarding to Claims 1-4, 10-12, 14, 17-21, 23 & 25-27, Pellon discloses a portable communication device (Column 1, lines 15-22 & Column 11, lines 12-20 & Column 20, lines 20-40) comprising an analog-to-digital converter to provide a digital output signal (Fig. 2a, element 210 & Column 3, lines 3-19 & Column 4, lines 27-43); a signal generator coupled to the digital output signal to generate a feedback signal (Fig. 2a, elements 218, 206, 201b & Column 3, lines 9-14 & Column 4, lines 7-48 & Column 12, lines 29-38); and wherein the portable communication device is adapted to subtract the feedback signal from an intermediate frequency (IF) signal (Fig. 2a, elements 202, 254, 206, 201b, 203 & Fig. 10, elements 1026, 700 & Column 2, lines 51-68 & Column 11, lines 16-18 & Column 20, lines 26-40 & Column 21, lines 40-51). Pellon also discloses the portable communication device further comprising a filter adapted to provide a filtered signal with a bandwidth, wherein the signal generator generates a feedback signal that reduces the difference between the IF signal and the feedback signal over at least a portion of the bandwidth of the filtered signal (Abstract, lines 1-18 & Fig. 2a, element 204, 202 & Column 1, lines 35-50 & Column 2, lines 51-68 & Column 3, lines 3-5 & Column 4, lines 7-21 & Column 5, lines 63-68 & Column 11, lines 11-20 & Column 12, lines 12-29 & Fig. 10, elements 1024, 1026, 700 & Fig. 7a & Column 20, lines 20-60). Pellon also discloses the portable communication device further comprising an integrator coupled to receive the subtracted signal (Fig. 2a, element 204 & Fig. 2b & Column 2, lines 57-68 & Column 3, lines 20-38 & Column 7, lines 14-40). Pellon further discloses in radar

applications wherein the received signals are heterodyned from a higher center frequency down to baseband and then converted from analog to digital domain to produce digital in-phase and quadrature components (Column 19, lines 11-20). Pellon also discloses the portable communication device further comprising an antenna adapted to receive a radio frequency signal (Fig. 10, element 1020), and the received RF signal is converted to an IF signal inputted into the apparatus (Fig. 10, elements 1024, 1026, 700). Pellon also discloses the portable communication device further comprising a storage medium having stored instructions to execute the processing of the received signal (Fig. 10, element 1030). However, Pellon does not explicitly disclose a multiplier to extract an in-phase part of the IF signal.

Khlat discloses a super-heterodyne receiver for receiving a radio frequency signal comprising a down-conversion stage for down converting the received RF signal to a complex intermediate frequency signal (Abstract, lines 1-5 & Fig. 1, element 20). Khlat further discloses the down converter comprising a multiplier to extract an in-phase part of the IF signal (Fig. 1, element 22 & Column 1, lines 5-26). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Khlat teaches a multiplier to extract an in-phase part of the IF signal and this is implemented in the communication device as described in Pellon so as to down convert the received RF signal to an IF signal and avoid the DC-offset noise in the baseband signal so as to be able to reliably demodulate the information data received.

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7. Claims 5-6, 15 & 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pellon in view of Khlat et al (6,678,340) and further in view of Sklar (Sklar, B; Digital Communications, Fundamentals and Applications; Chapter 3, Page 128-129; Copyright 1988, Prentice Hall).

Regarding to Claims 5-6, 15 & 22, Pellon in view of Khlat discloses a portable communications device comprising an analog-to-digital converter to provide a digital output signal; a signal generator coupled to the digital output signal to generate a feedback signal; and wherein the portable communication device is adapted to subtract the feedback signal from an intermediate frequency (IF) signal; and a multiplier to extract an in-phase part of the IF signal after subtraction of the feedback signal as described above. However, Pellon does not specify the signal generator to be a modulator and wherein the signal generator further comprises an amplitude shift key modulator.

Sklar discloses that an ASK modulator which functions as an On-Off keying modulator (Page 129, Fig. 3.5 ©). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Sklar teaches implementing an ASK modulator as a switching device and this is analogous to the switching device as described in Pellon in view of Khlat, thus satisfying the limitation of the claim.

8. Claims 7, 9, 13 & 16, are rejected under 35 U.S.C. 103(a) as being unpatentable over Pellon in view of Khlat et al (6,678,340) in further view of Sklar (Sklar, B; Digital Communications, Fundamentals and

Applications; Chapter 3, Page 128-129; Copyright 1988, Prentice Hall)

and in further view of Ko et al. (6,577,674).

Regarding to Claims 7, 9, 13 & 16, Pellon in view of Khlat and in further view of Sklar discloses a portable communications device comprising an analog-to-digital converter to provide a digital output signal; a signal generator coupled to the digital output signal to generate a feedback signal wherein the signal generator further comprises a modulator; and wherein the portable communication device is adapted to subtract the feedback signal from an intermediate frequency (IF) signal so as to reduce the difference between the received IF signal and the feedback signal as described above. Pellon further discloses the ADC resolution (number of output bits) can vary depending on the sampling rate to reduce quantization noise (Column 1, lines 65-68 & Column 2, lines 1-15 & Column 4, lines 11-25 & Column 6, lines 36-58). However, Pellon in view of Khlat in further view of Sklar does not disclose a multiplier adapted to multiply a local oscillator and the received signal.

Ko discloses a receiver in a mobile station comprising a multiplier and a local oscillator (Fig. 1) wherein the incoming signal is down converted to a baseband signal for further processing and retrieving the transmitted data (message) (Fig. 1 & Column 2, lines 26-48). Ko further discloses further sampling the down converted signal for digitally processing the received signal for accurate retrieval (Fig. 1 & Column 2, lines 1-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that it is possible to implement the multiplier and local oscillator as

described in Ko in the receiver as described in Pellon in view of Khlat in further view of Sklar so as to further down convert the bandpass filtered IF frequency signal to baseband for accurate sampling and demodulating and this also couples the oscillator to the signal generator which is in the feedback loop. Furthermore, coupling the local oscillator to the modulator can be implemented so as to up convert the baseband signal to the IF frequency in the feedback loop as described in Pellon in view of Sklar, thus satisfying the limitations of the claims.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (571)-272-3038. The examiner can normally be reached on M-F: 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571)-272-3042.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sudhanishu C. Pathak
Examiner
Art Unit 2611